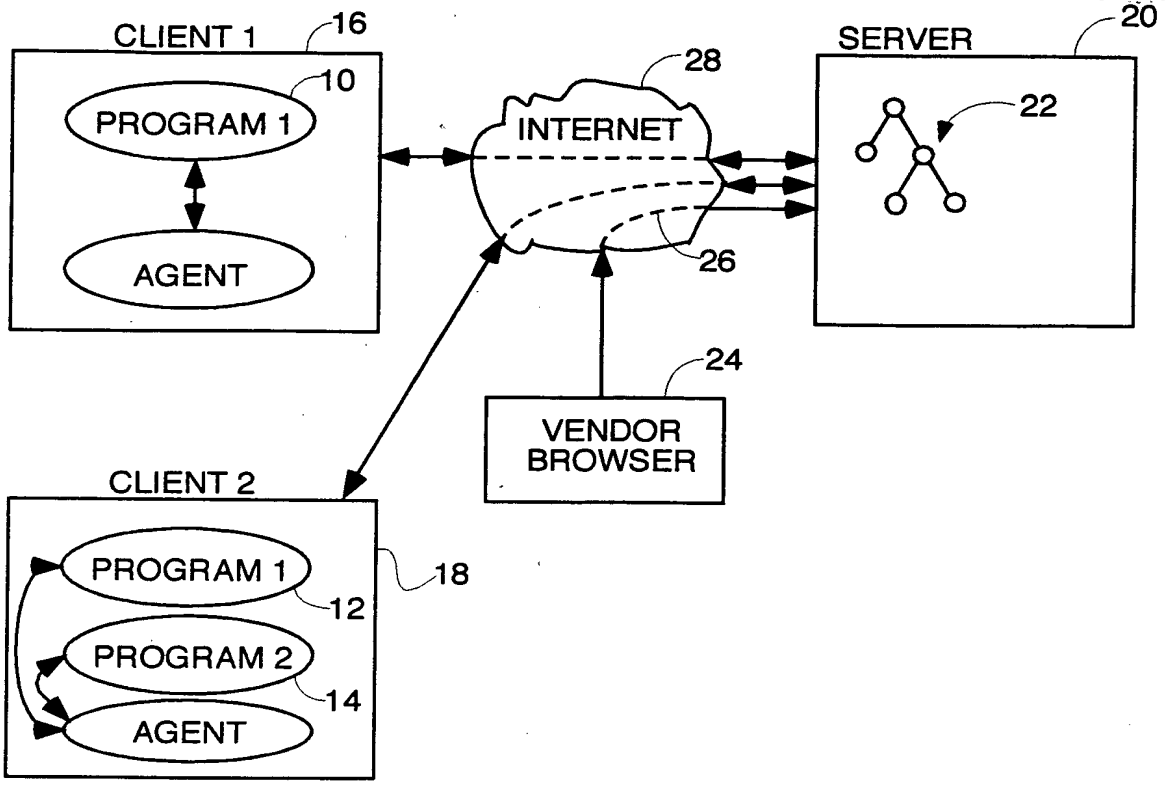

CLIENT 1
16
10
PROGRAM 1
AGENT
28
INTERNET
26
SERVER
20
22
24
VENDOR
BROWSER
CLIENT 2
18
PROGRAM 1
12
PROGRAM 2
14
AGENT

FIG. 1

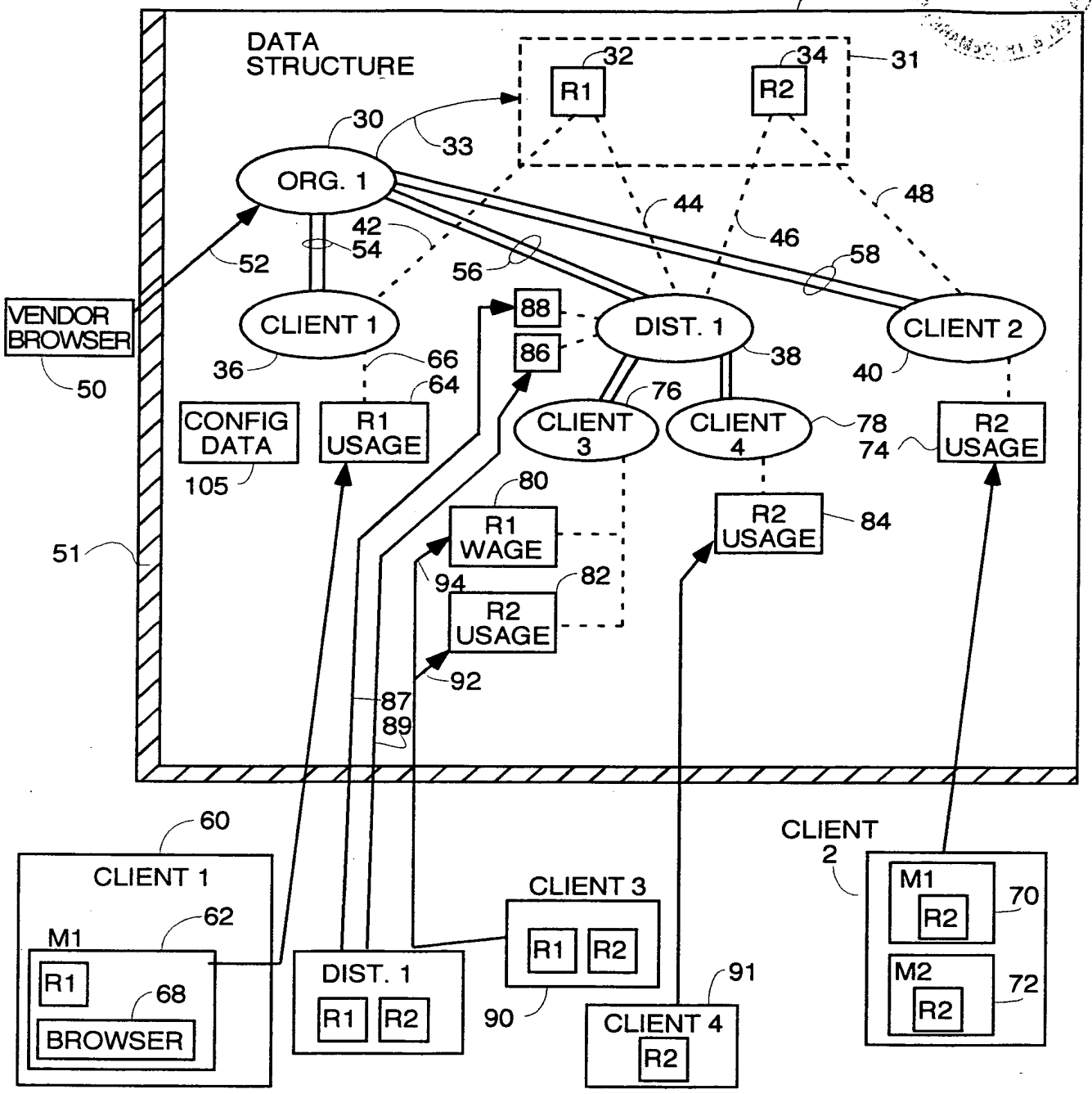

22
DATA STRUCTURE
R1
32
R2
34
31
30
33
ORG. 1
44
48
46
42
54
52
56
58
VENDOR BROWSER
50
CLIENT 1
88
86
DIST. 1
CLIENT 2
36
66
64
38
40
CONFIG DATA
105
R1 USAGE
CLIENT 3
76
CLIENT 4
78
74
R2 USAGE
80
R1 WAGE
94
82
R2 USAGE
84
R2 USAGE
92
51
87
89
60
CLIENT 1
62
M1
R1
68
BROWSER
DIST. 1
R1
R2
CLIENT 3
R1
R2
90
91
CLIENT 4
R2
CLIENT 2
M1
R2
70
M2
R2
72

FIG. 2

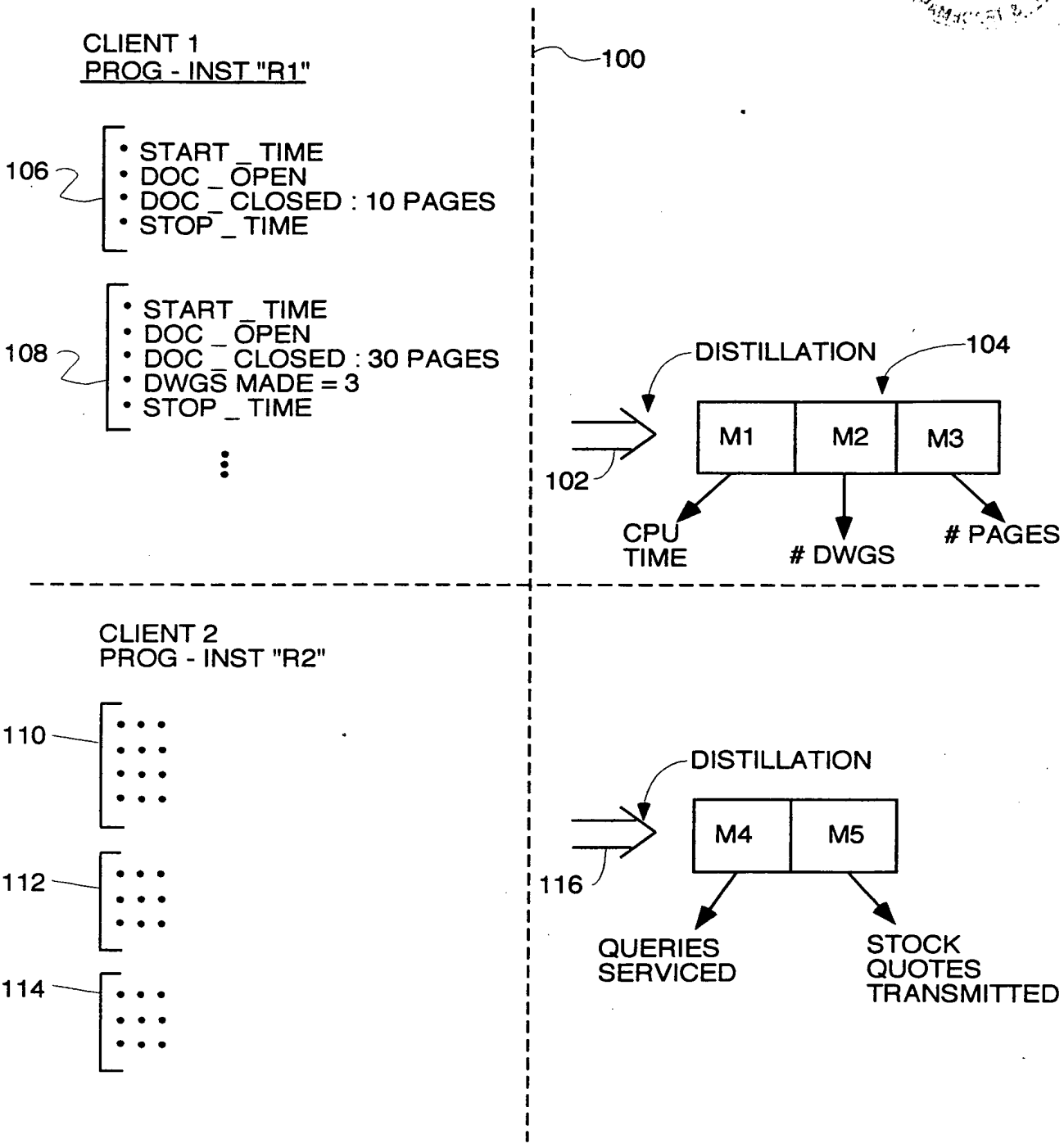

CLIENT 1
PROG - INST "R1"
100
106
• START _ TIME
• DOC _ OPEN
• DOC _ CLOSED : 10 PAGES
• STOP _ TIME
108
• START _ TIME
• DOC _ OPEN
• DOC _ CLOSED : 30 PAGES
• DWGS MADE = 3
• STOP _ TIME
DISTILLATION
104
M1
M2
M3
102
CPU TIME
DWGS
PAGES
CLIENT 2
PROG - INST "R2"
110
112
114
DISTILLATION
M4
M5
116
QUERIES SERVICED
STOCK QUOTES TRANSMITTED

FIG. 3

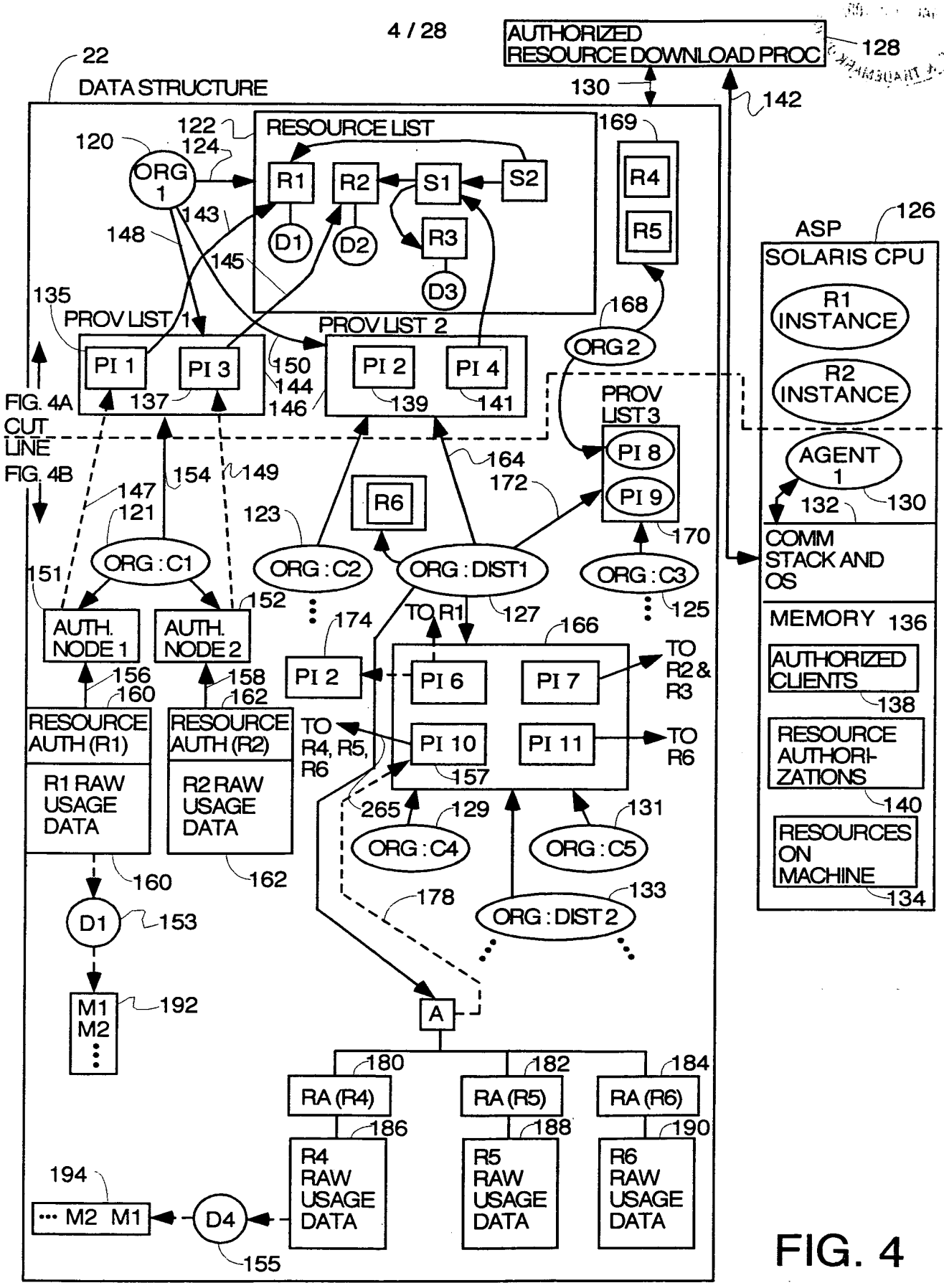

AUTHORIZED RESOURCE DOWNLOAD PROC
128
130
142
22
DATA STRUCTURE
RESOURCE LIST
122
124
120
ORG 1
R1
R2
S1
S2
D1
D2
D3
143
148
145
169
R4
R5
ASP
126
SOLARIS CPU
R1 INSTANCE
R2 INSTANCE
AGENT 1
132
130
COMM STACK AND OS
MEMORY 136
AUTHORIZED CLIENTS
138
RESOURCE AUTHORI-ZATIONS
140
RESOURCES ON MACHINE
134
135
PROV LIST 1
PROV LIST 2
PI 1
PI 3
PI 2
PI 4
137
150
144
146
139
141
168
ORG 2
PROV LIST 3
PI 8
PI 9
170
FIG. 4A
CUT LINE
FIG. 4B
164
172
147
154
149
121
123
R6
ORG : C1
ORG : C2
ORG : DIST1
ORG : C3
125
151
152
174
TO R1
127
166
AUTH. NODE 1
AUTH. NODE 2
PI 2
PI 6
PI 7
TO R2 & R3
156
160
158
162
RESOURCE AUTH (R1)
RESOURCE AUTH (R2)
TO R4, R5, R6
PI 10
PI 11
TO R6
157
R1 RAW USAGE DATA
R2 RAW USAGE DATA
265
129
131
ORG : C4
ORG : C5
160
162
178
133
D1
153
ORG : DIST 2
M1
M2
192
A
180
182
184
RA (R4)
RA (R5)
RA (R6)
186
188
190
R4 RAW USAGE DATA
R5 RAW USAGE DATA
R6 RAW USAGE DATA
194
··· M2 M1
D4
155

FIG. 4

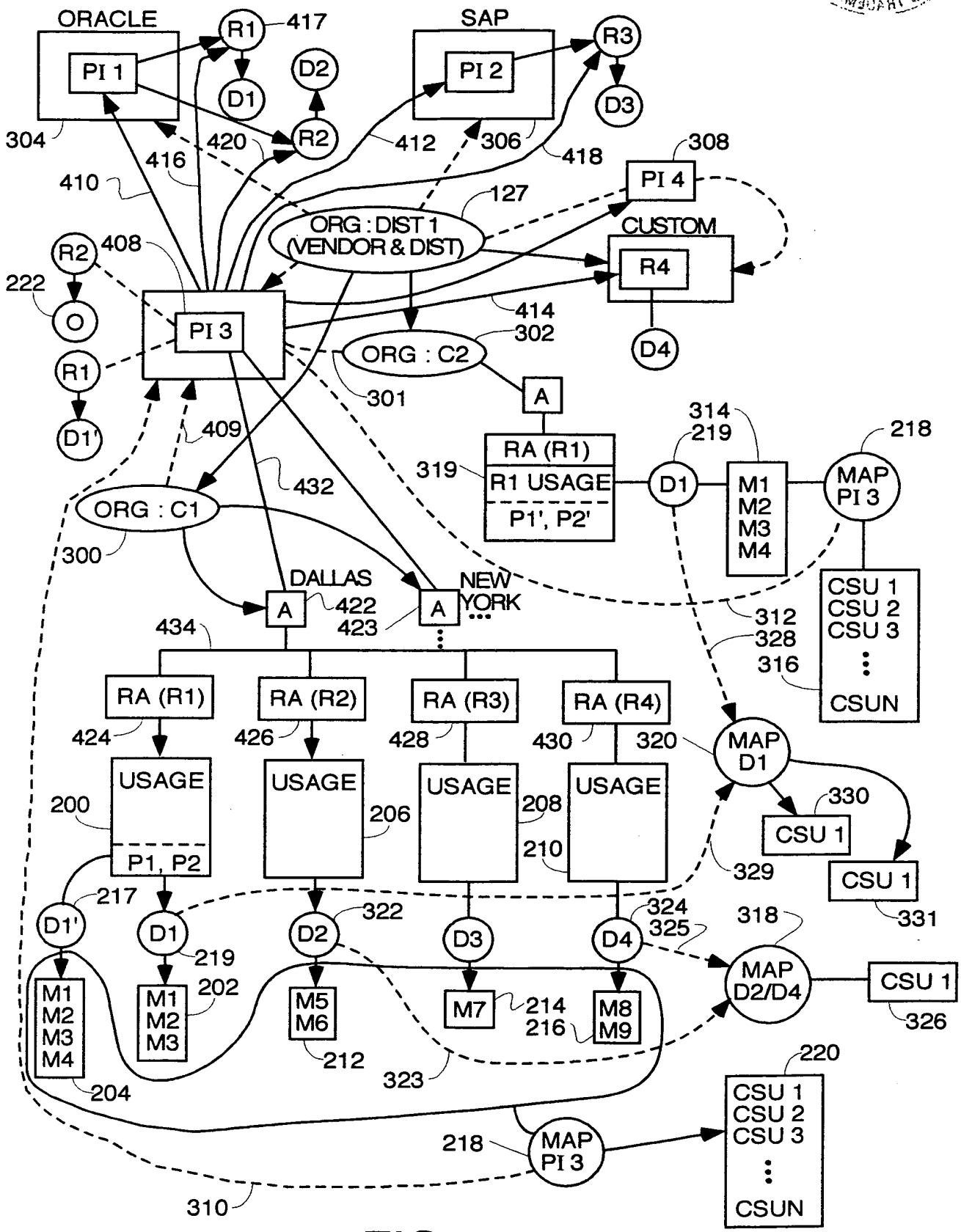

ORACLE
PI 1
R1
417
D1
D2
R2
304
420
416
412
SAP
PI 2
R3
D3
306
418
308
PI 4
410
127
ORG : DIST 1
(VENDOR & DIST)
CUSTOM
R4
D4
R2
408
222
O
PI 3
414
302
ORG : C2
R1
D1'
301
A
409
RA (R1)
R1 USAGE
P1', P2'
319
314
219
D1
M1
M2
M3
M4
218
MAP
PI 3
CSU 1
CSU 2
CSU 3
CSUN
ORG : C1
300
432
DALLAS
NEW
YORK
A
422
423
434
312
328
316
RA (R1)
RA (R2)
RA (R3)
RA (R4)
424
426
428
430
320
MAP
D1
USAGE
200
P1, P2
206
208
210
330
CSU 1
329
331
217
D1'
D1
219
D2
322
D3
D4
324
325
318
M1
M2
M3
M4
202
M5
M6
M7
214
216
M8
M9
MAP
D2/D4
326
204
212
323
220
218
MAP
PI 3
310

FIG. 5

OVERALL PROCESS TO DISTILL RAW USAGE DATA TO METRIC DATA BY A PROGRAMMABLE MAPPING

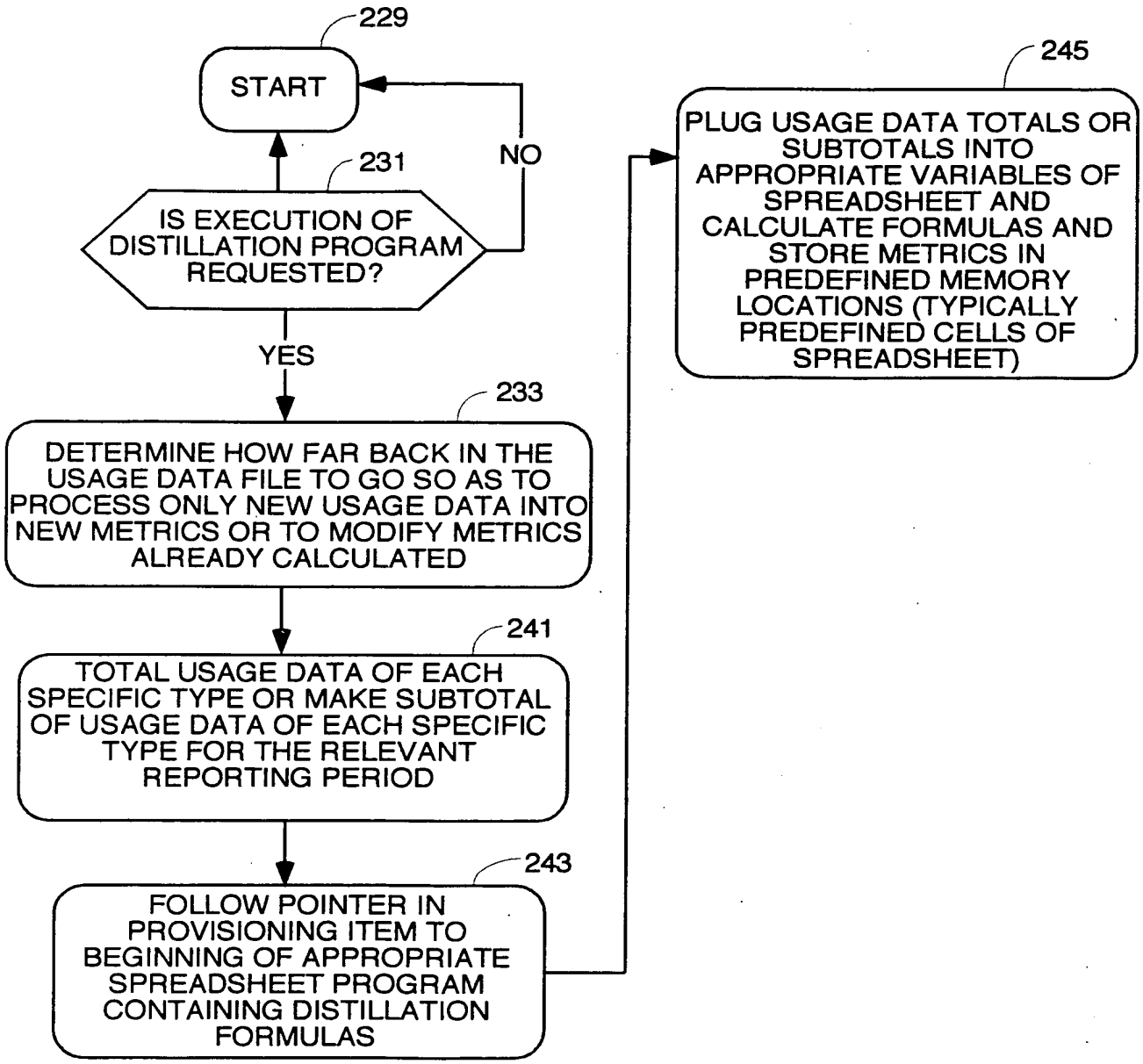


FIG. 6A

OVERALL PROCESS TO DISTILL RAW USAGE DATA TO METRIC DATA BY A PROGRAMMABLE MAPPING USING A PROGRAMMABLE DISTILLATION PGM

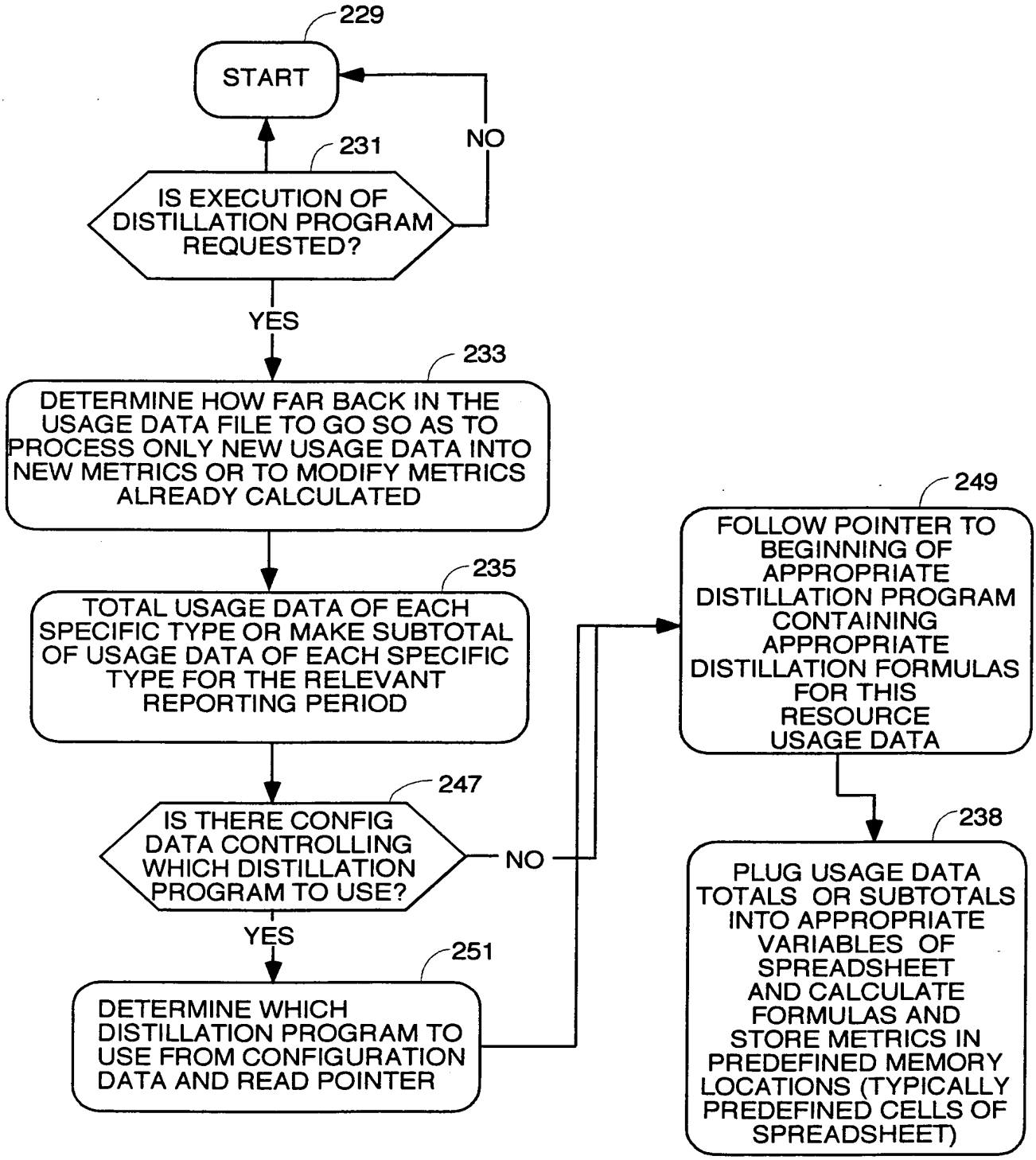


FIG. 6B

PROCESS TO PROGRAMMABLY DISTILL RAW USAGE DATA TO METRICS AND PROGRAMMABLY DISTILL THE METRICS INTO CENTRAL SERVICE UNITS OF THE CUSTOMER'S DESIGN

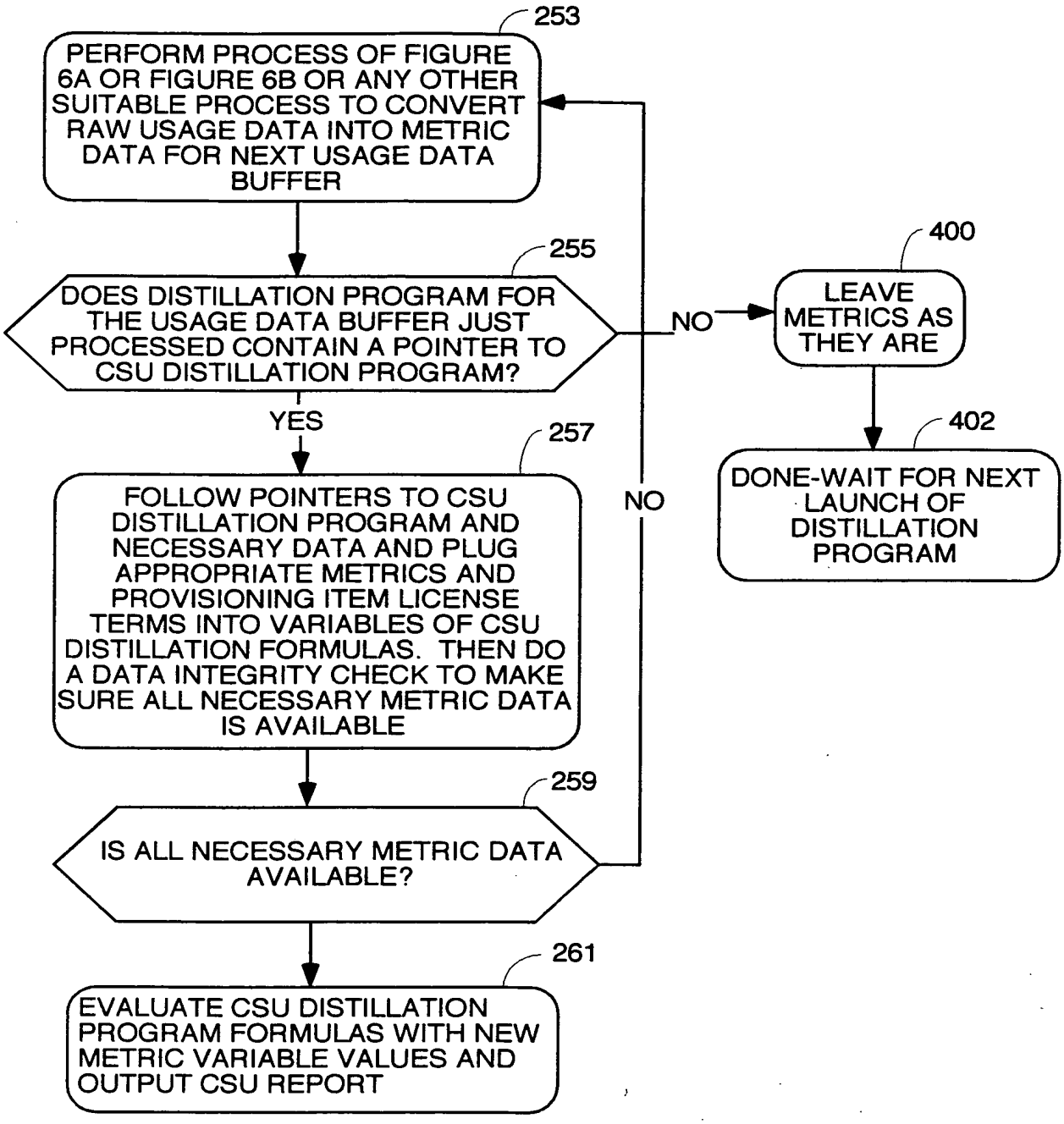


FIG. 7

OVERALL PROCESS TO COLLECT RAW USAGE DATA IN A CENTRAL SERVER AND USE IT TO PREPARE METRICS AND PREPARE INVOICES OR REPORTS THEREFROM

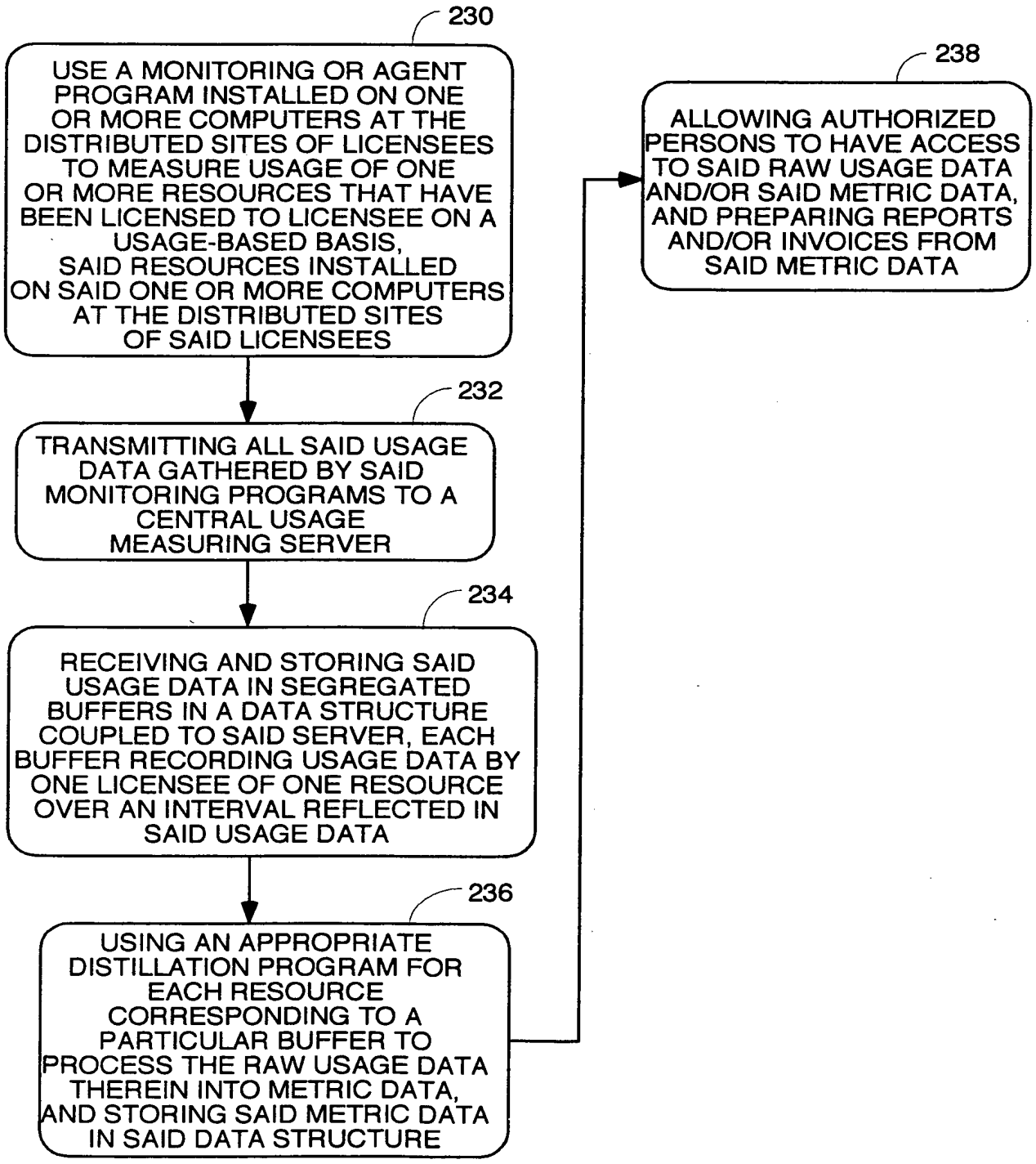


FIG. 8

PROCESS TO BUILD USAGE MEASURING SERVER DATA STRUCTURE AND ALLOW RESTRICTED ACCESS THERETO

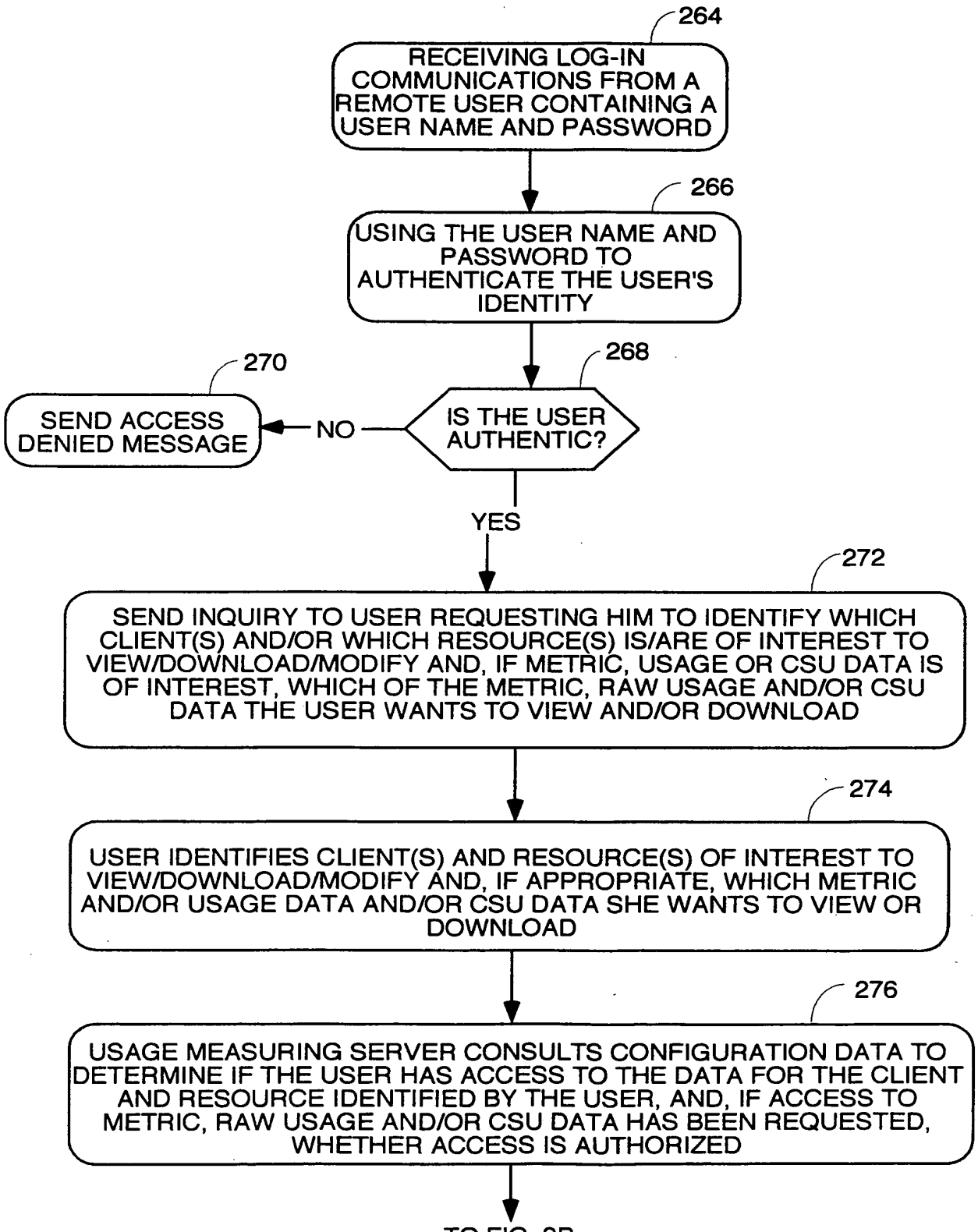


FIG. 9A

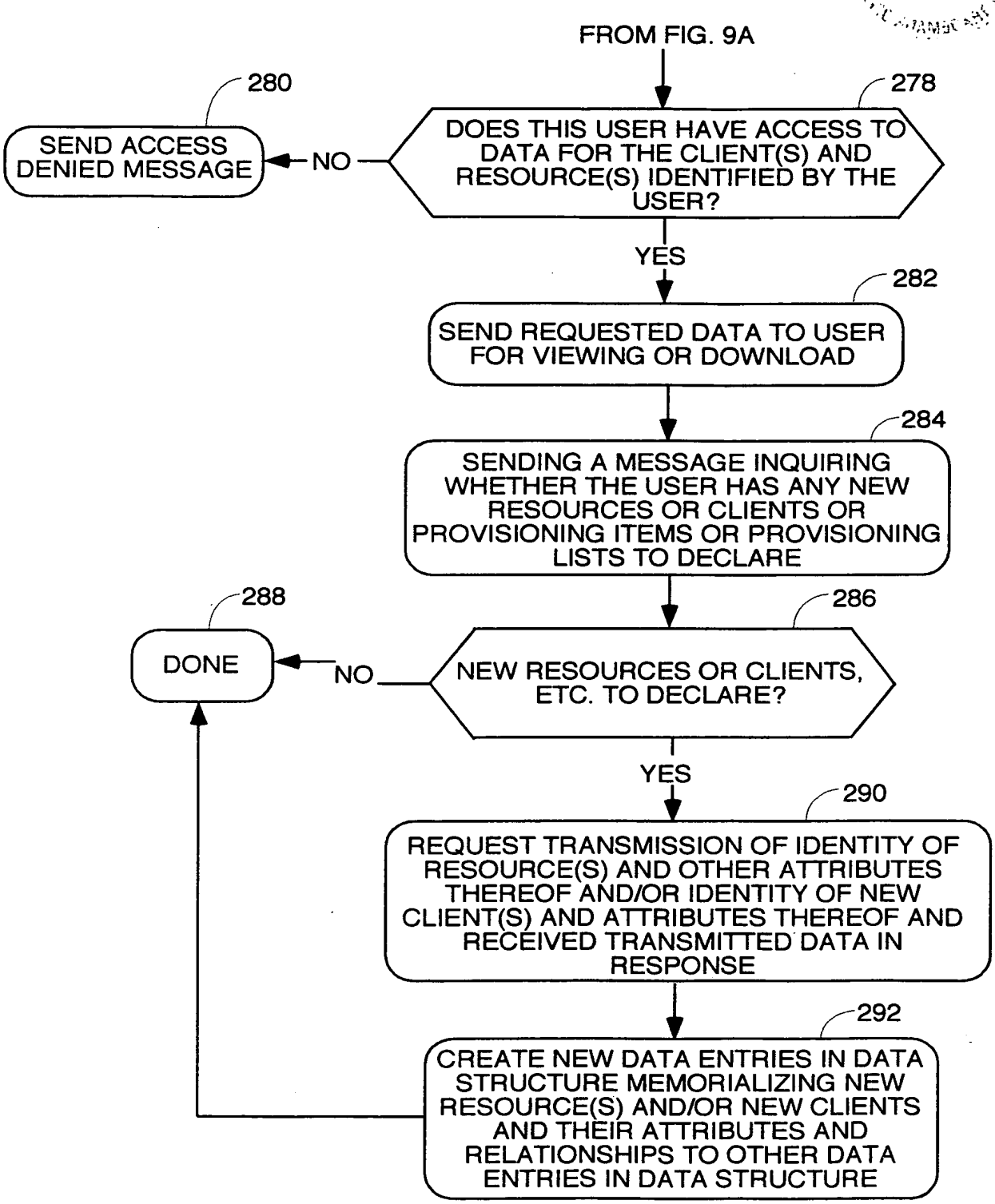

FROM FIG. 9A
278
DOES THIS USER HAVE ACCESS TO DATA FOR THE CLIENT(S) AND RESOURCE(S) IDENTIFIED BY THE USER?
NO
280
SEND ACCESS DENIED MESSAGE
YES
282
SEND REQUESTED DATA TO USER FOR VIEWING OR DOWNLOAD
284
SENDING A MESSAGE INQUIRING WHETHER THE USER HAS ANY NEW RESOURCES OR CLIENTS OR PROVISIONING ITEMS OR PROVISIONING LISTS TO DECLARE
286
NEW RESOURCES OR CLIENTS, ETC. TO DECLARE?
NO
288
DONE
YES
290
REQUEST TRANSMISSION OF IDENTITY OF RESOURCE(S) AND OTHER ATTRIBUTES THEREOF AND/OR IDENTITY OF NEW CLIENT(S) AND ATTRIBUTES THEREOF AND RECEIVED TRANSMITTED DATA IN RESPONSE
292
CREATE NEW DATA ENTRIES IN DATA STRUCTURE MEMORIALIZING NEW RESOURCE(S) AND/OR NEW CLIENTS AND THEIR ATTRIBUTES AND RELATIONSHIPS TO OTHER DATA ENTRIES IN DATA STRUCTURE

FIG. 9B

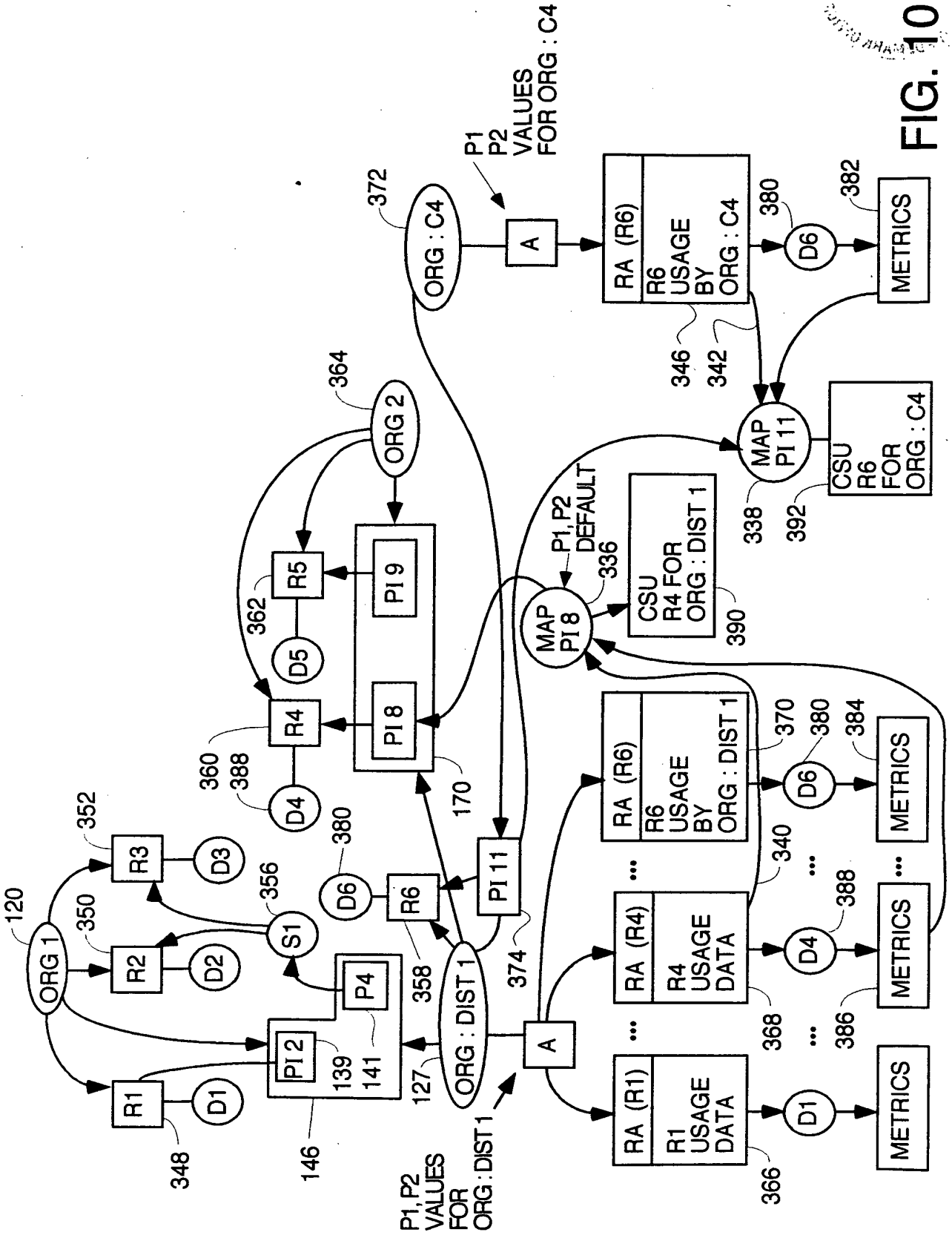

ORG 1
ORG 2
ORG : C4
ORG : DIST 1
R1
R2
R3
R4
R5
R6
D1
D2
D3
D4
D5
D6
S1
P1 2
P4
PI 8
PI 9
PI 11
A
MAP PI 8
MAP PI 11
P1, P2 DEFAULT
P1, P2 VALUES FOR ORG : C4
P1, P2 VALUES FOR ORG : DIST 1
CSU R4 FOR ORG : DIST 1
CSU R6 FOR ORG : C4
RA (R6) R6 USAGE BY ORG : C4
RA (R6) R6 USAGE BY ORG : DIST 1
RA (R4) R4 USAGE DATA
RA (R1) R1 USAGE DATA
METRICS
120
127
139
141
146
170
338
340
342
346
348
350
352
356
358
360
362
364
366
368
370
372
374
380
382
384
386
388
390
392

FIG. 10

ALTERNATIVE PROCESS TO PROGRAMMABLY DISTILL RAW USAGE DATA TO METRICS AND PROGRAMMABLY DISTILL THE METRICS INTO CENTRAL SERVICE UNITS USING A CSU DISTILLATION PROGRAM LINKED TO PROVISIONING ITEM DETAILING LICENSE TERMS

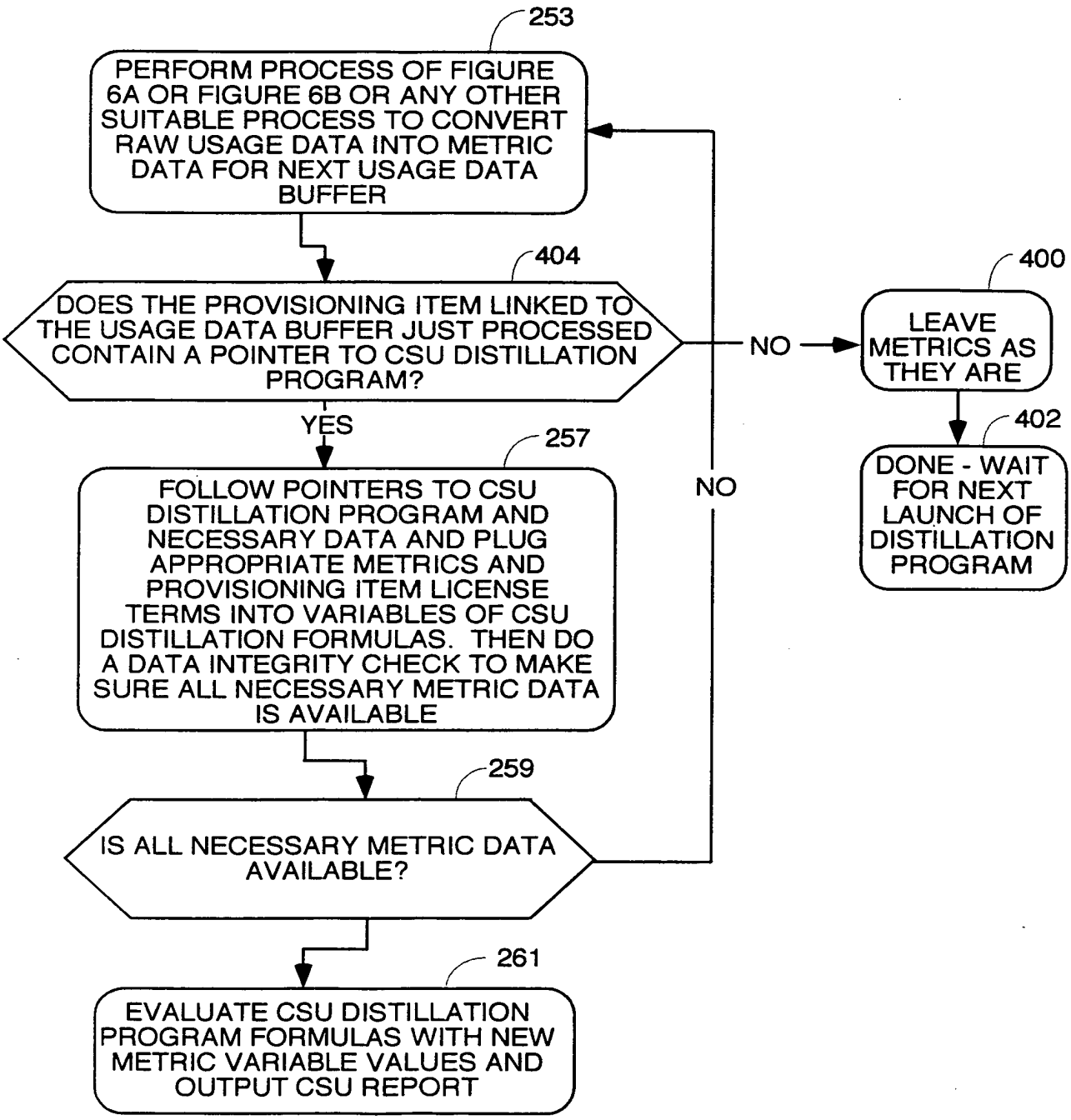


FIG. 11

ALTERNATIVE PROCESS TO PROGRAMMABLY DISTILL RAW USAGE DATA TO METRICS AND PROGRAMMABLY DISTILL THE METRICS INTO CENTRAL SERVICE UNITS USING A CSU DISTILLATION PROGRAM LINKED TO THE USAGE DATA BUFFER OF EACH CLIENT THAT WANTS CSU BASED REPORTS

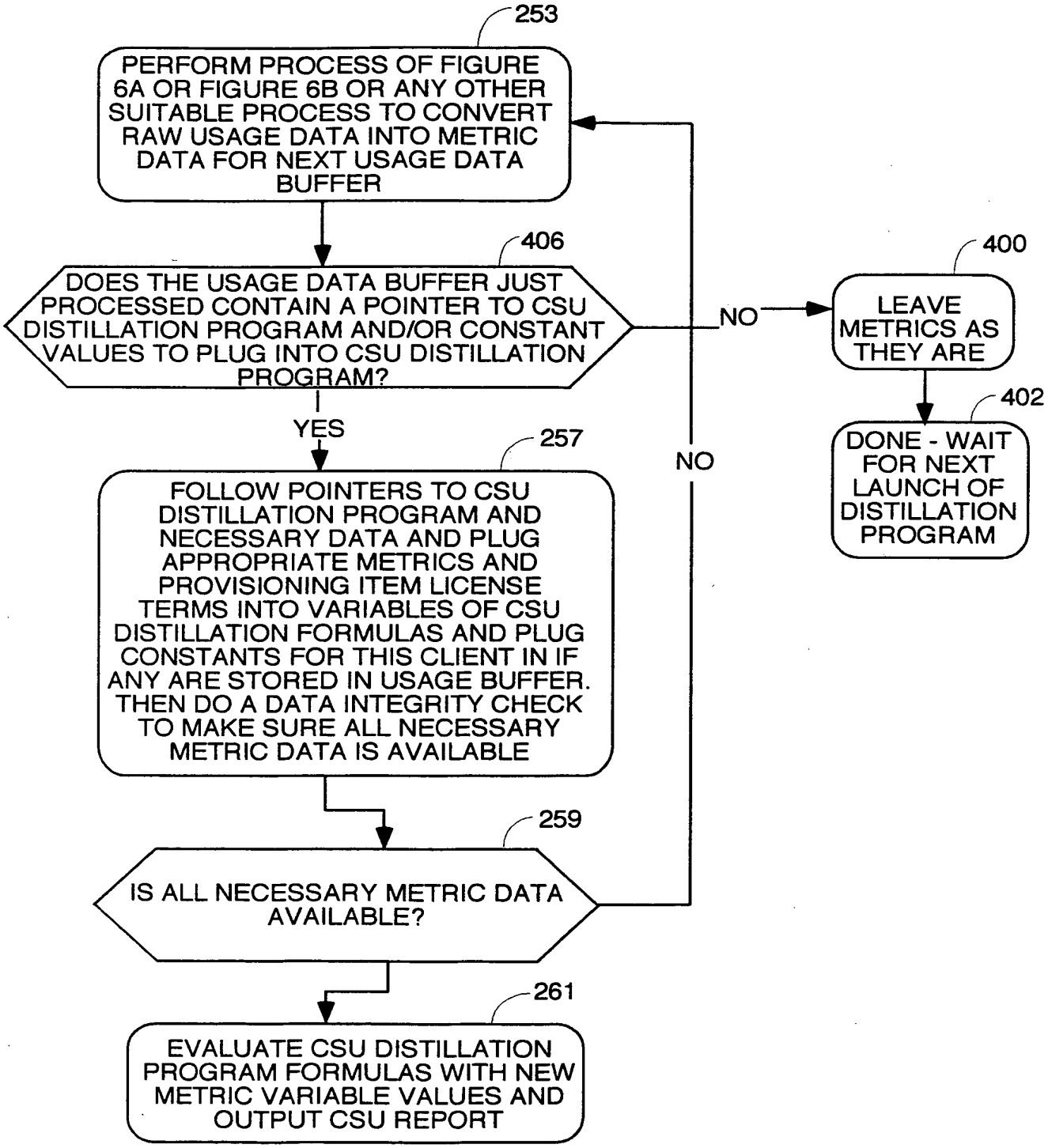


FIG. 12

PROCESS TO CREATE DATA STRUCTURE TO SUPPORT SUITE LICENSING AND TO USE THE DATA STRUCTURE TO IMPLEMENT SUITE LICENSING

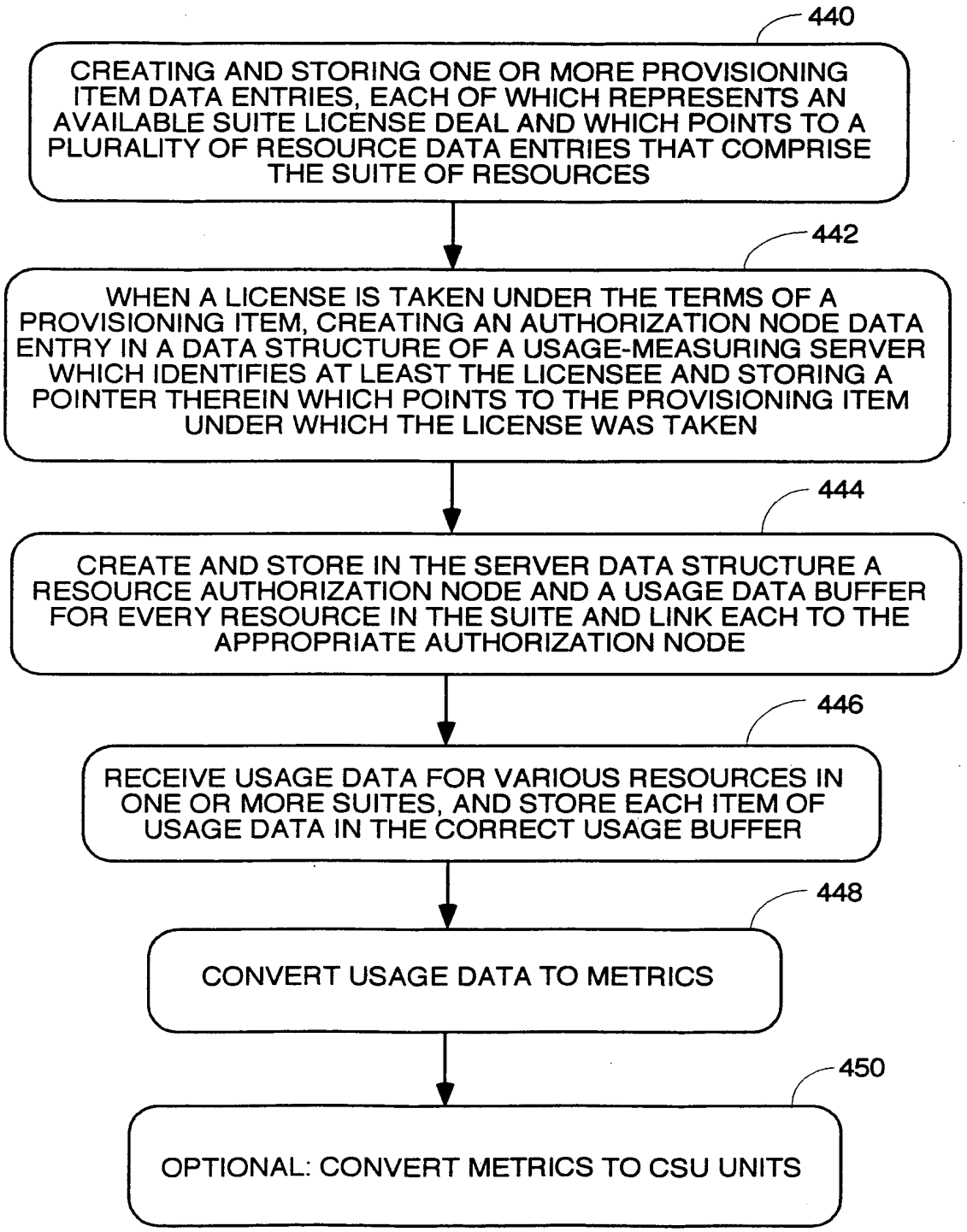


FIG. 13

ONE STOP SHOPPING PROCESS TO DETERMINE ALL AVAILABLE LICENSE DEALS ON A PARTICULAR RESOURCE

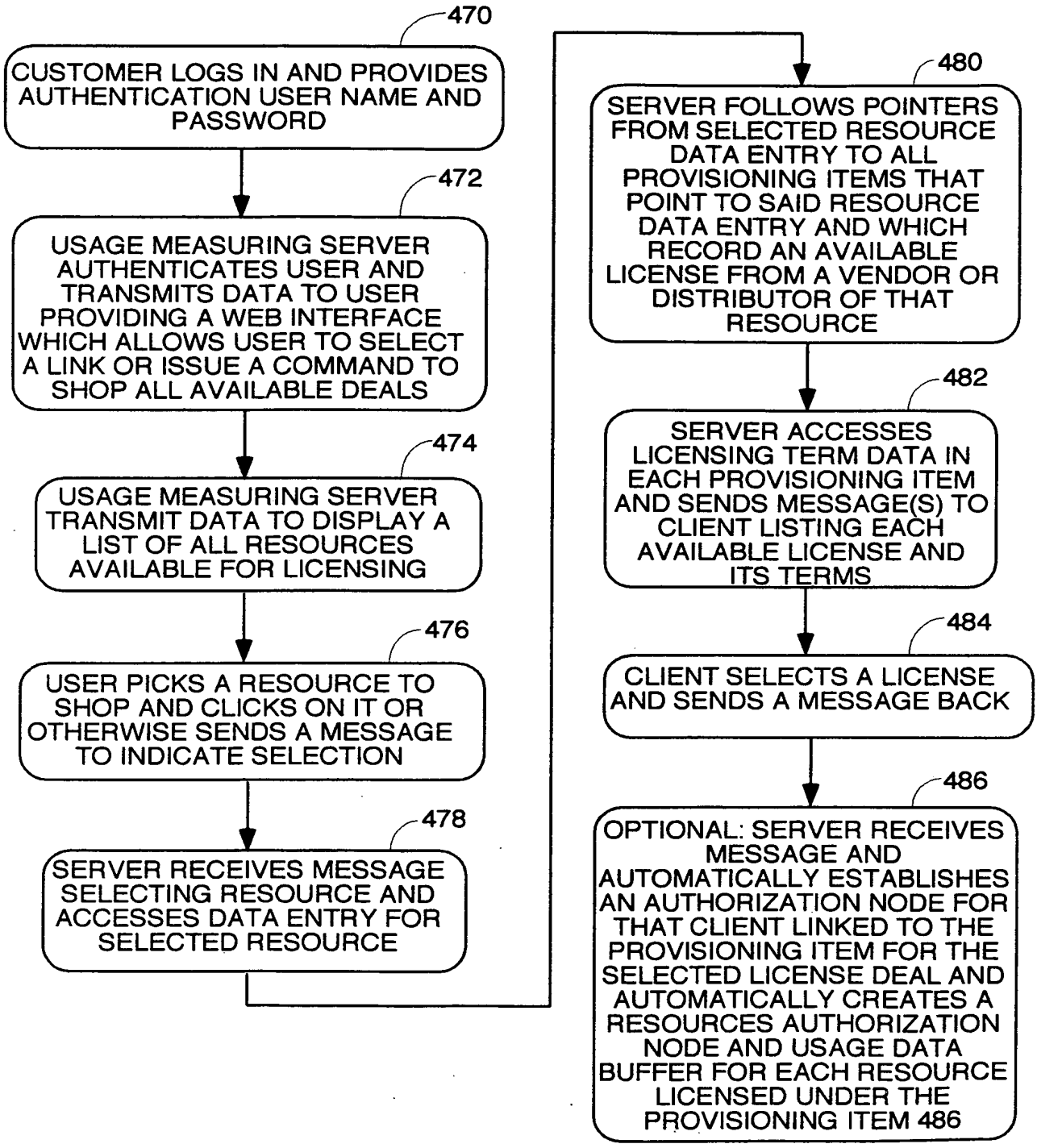


FIG. 14

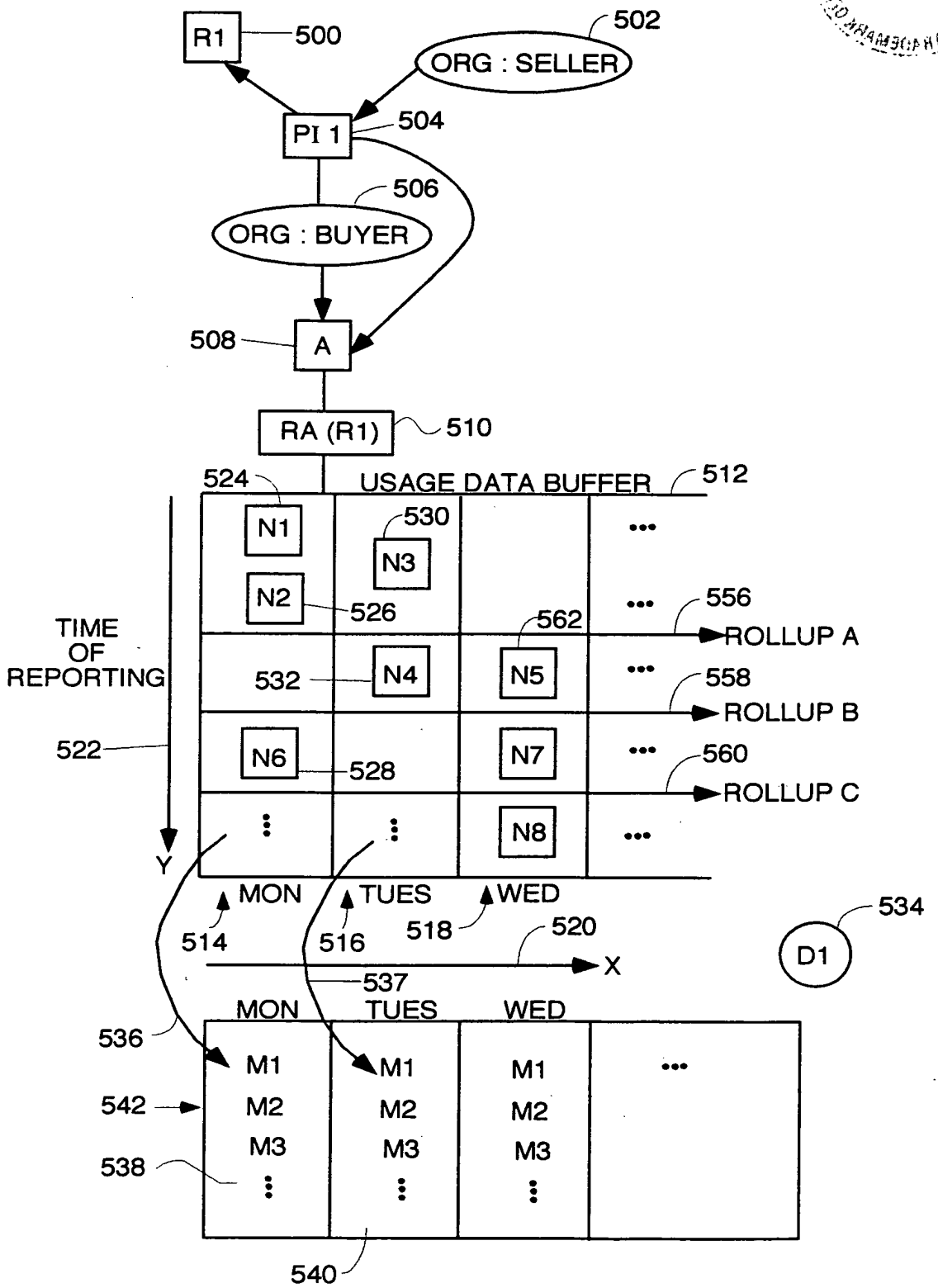

R1
500
502
ORG : SELLER
PI 1
504
506
ORG : BUYER
508
A
RA (R1)
510
524
USAGE DATA BUFFER
512
N1
530
N3
N2
526
562
556
ROLLUP A
TIME
OF
REPORTING
532
N4
N5
558
ROLLUP B
522
N6
528
N7
560
ROLLUP C
N8
Y
MON
TUES
WED
514
516
518
520
534
D1
X
537
MON
TUES
WED
536
M1
M1
M1
542
M2
M2
M2
M3
M3
M3
538
540

FIG. 15

PROCESS TO COLLECT USAGE DATA, PARTITION IT INTO TIME SEGMENTS AND GENERATE METRICS THEREFROM

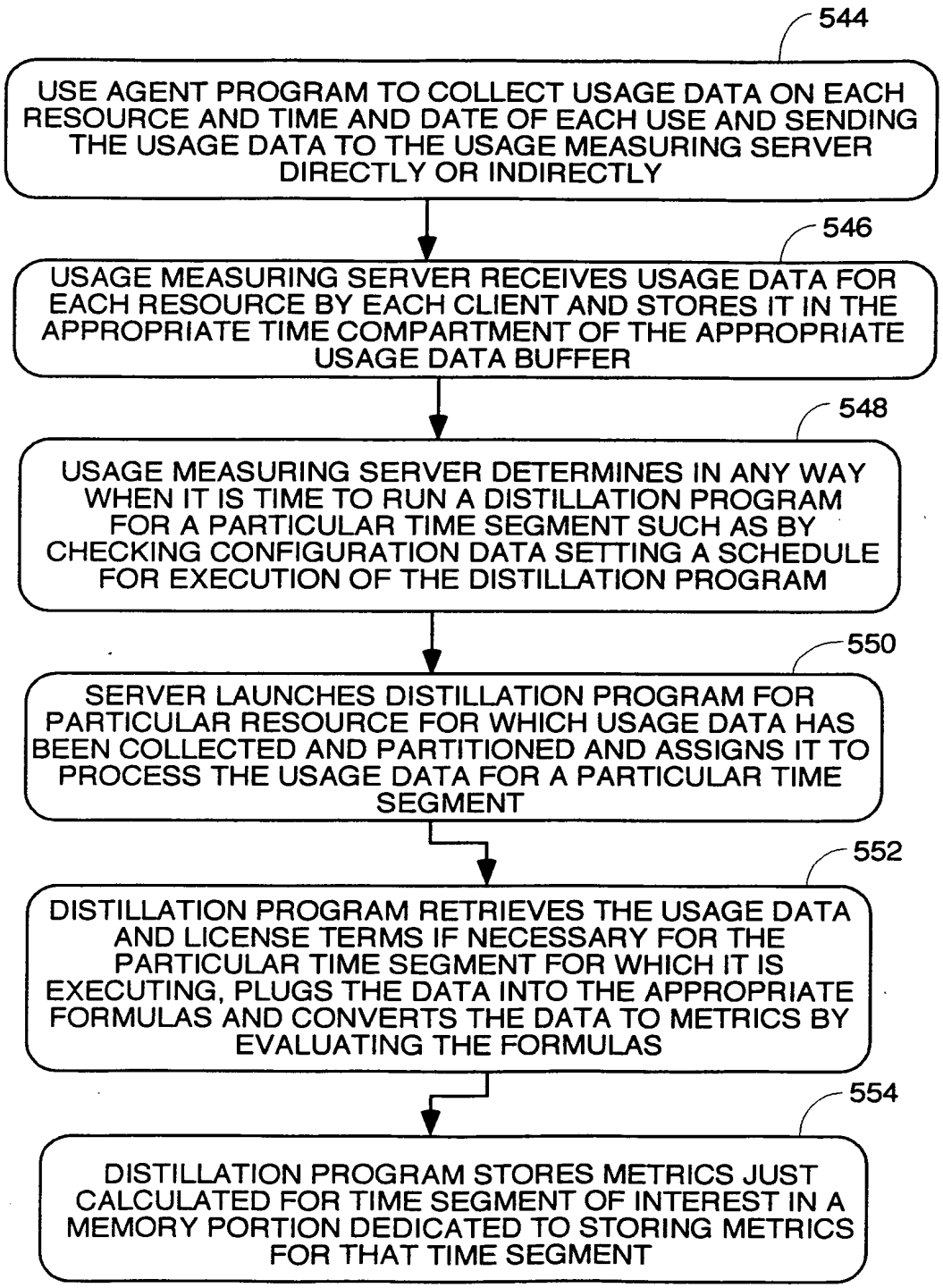


FIG. 16

ROLLUP A ID 39

	MON	TUES	WED	...
M1= CPU	10	1	0	...
M2= DOCS	500	50	0	...
M3= #PGS	759	71	0	...
	⋮	⋮	⋮	

FIG. 17

ALTERNATIVE ROLLUP B ID 40

MON	TUES	WED
0	3	2
0	70	40
0	139	96

FIG. 18

PREFERRED ROLLUP B ID 50

MON	TUES	WED	
10	4	2	
500	120	40	
759	210	96	

FIG. 19

ALTERNATIVE ROLLUP B ID 40

MON	TUES	WED
0	4	2
0	120	40
0	210	96

FIG. 20

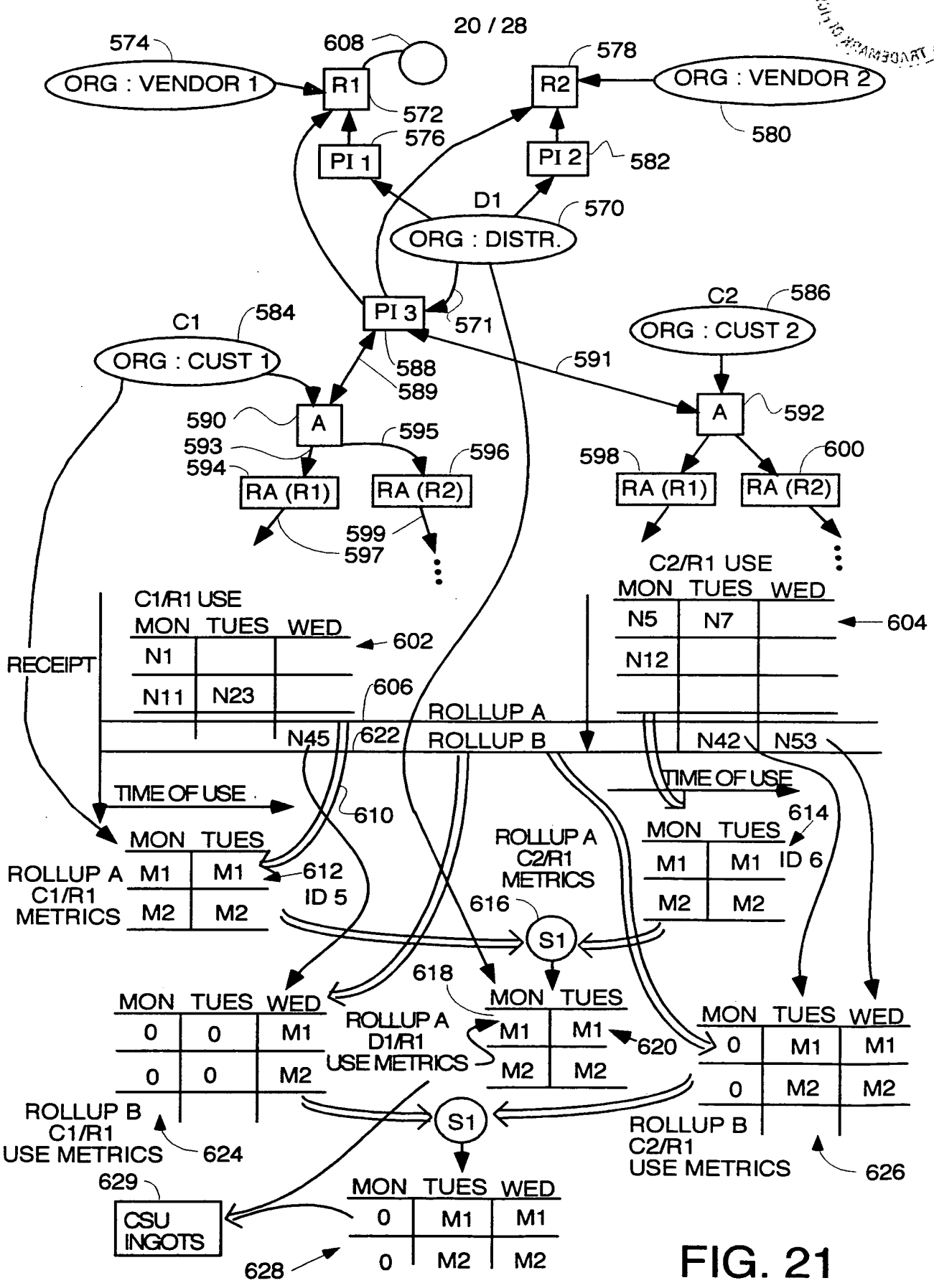

574
ORG : VENDOR 1
608
R1
572
578
R2
ORG : VENDOR 2
580
576
PI 1
PI 2
582
D1
570
ORG : DISTR.
PI 3
571
C1
584
ORG : CUST 1
588
589
591
C2
586
ORG : CUST 2
590
A
595
593
594
596
RA (R1)
RA (R2)
599
597
592
598
600
C1/R1 USE
MON TUES WED
602
N1
N11 N23
C2/R1 USE
MON TUES WED
N5 N7
604
N12
RECEIPT
606
ROLLUP A
ROLLUP B
N45
622
N42 N53
TIME OF USE
610
614
MON TUES
ROLLUP A
C1/R1
METRICS
M1 M1
M2 M2
612
ID 5
ROLLUP A
C2/R1
METRICS
616
S1
ID 6
618
MON TUES WED
0 0 M1
0 0 M2
ROLLUP A
D1/R1
USE METRICS
620
ROLLUP B
C1/R1
USE METRICS
624
0 M1 M1
0 M2 M2
ROLLUP B
C2/R1
USE METRICS
626
629
CSU
INGOTS
628

FIG. 21

PROCESS FOR ONE PROTOCOL ACCESS TO USAGE/METRIC/CSU DATA FOR ALL LICENSEES OF A LICENSOR FROM A USAGE MEASURING SERVER

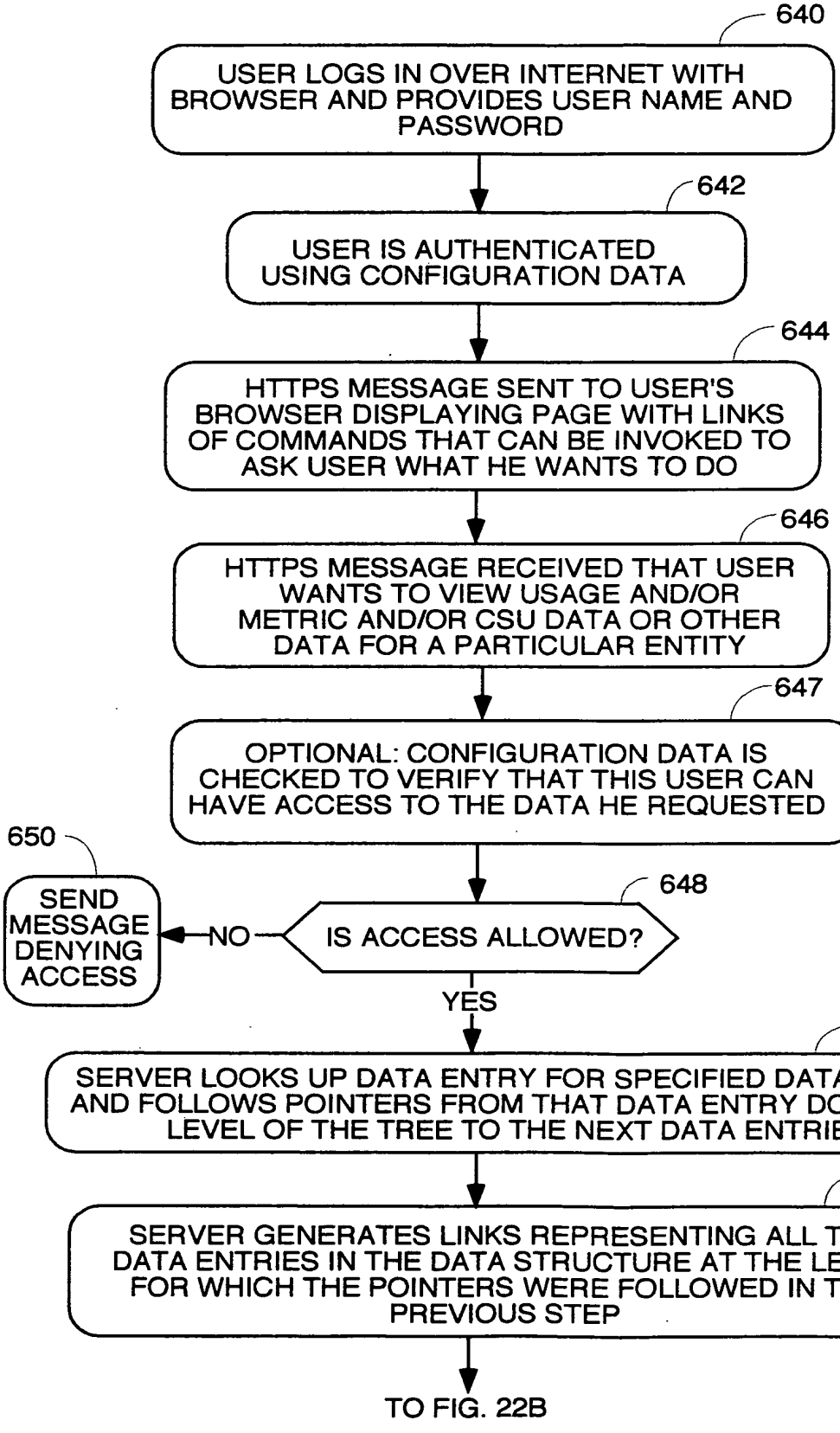


FIG. 22A

FROM FIG. 22A

656

SERVER SENDS THESE LINKS BACK IN HTTPS MESSAGE(S) WHICH CAUSE THE USER'S COMPUTER TO DISPLAY THE LINKS PREFERABLY WITH DESCRIPTIVE TEXT WHICH DESCRIBES WHAT EACH DATA ENTRY REPRESENTED BY A LINK IS

658

SERVER RECEIVES HTTPS MESSAGE(S) BACK FROM USER INDICATING WHICH LINKS USER SELECTED INDICATING WHICH DATA USER WISHES TO SEE

660

SERVER ACCESSES WHATEVER TYPE OF DATA USER SELECTED AND SENDS IT TO USER IN HTTPS MESSAGE(S) FOR DISPLAY ON USER COMPUTER

662

THE SERVER SENDS AN HTTPS MESSAGE TO USER ASKING IF THE USER WANTS TO SEE MORE DATA BELOW THE LEVEL OF THE TREE JUST DISPLAYED

664

SERVER RECEIVES MESSAGE INDICATING USER WANTS TO SEE MORE DATA

666

SERVER FOLLOWS LINKS FROM DATA ENTRY OR ENTRIES JUST DISPLAYED DOWN ONE MORE LEVEL OF TREE AND GENERATES LINKS FOR THE DATA ENTRY OR ENTRIES SO FOUND

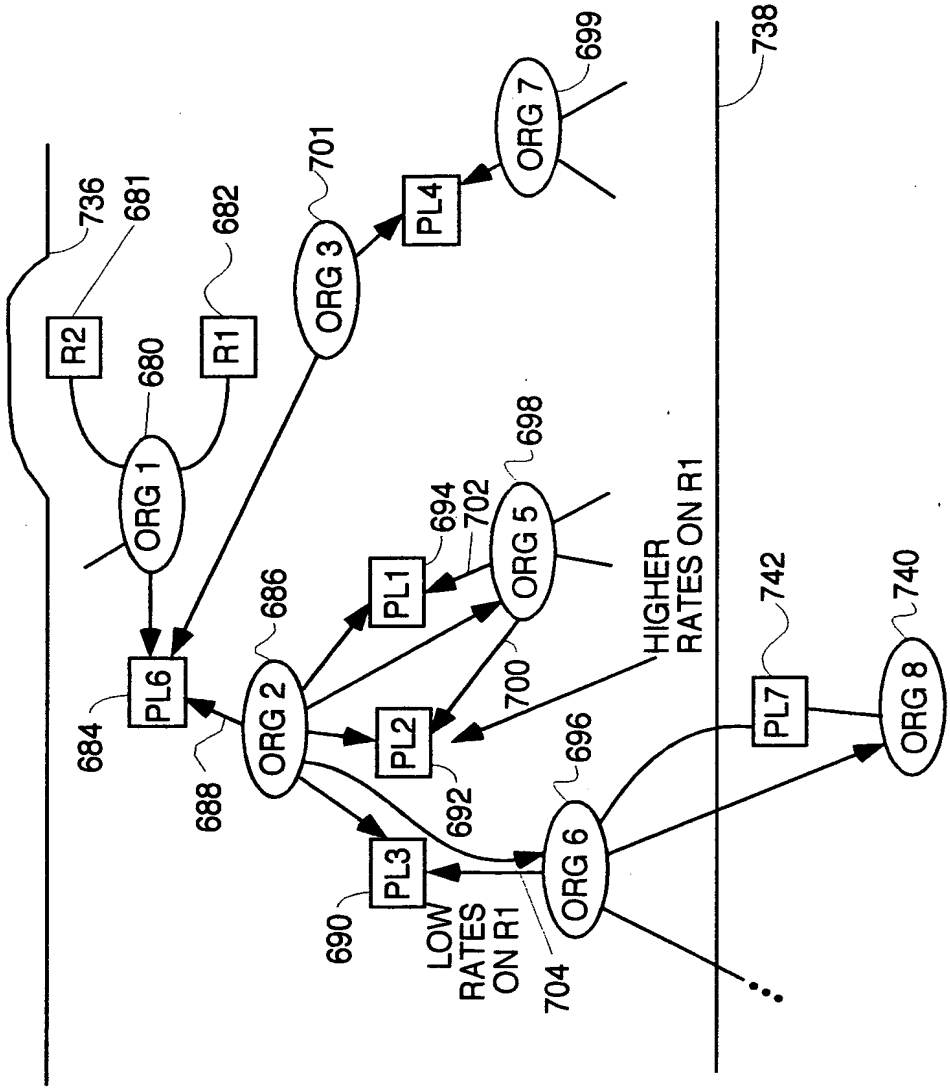
668

SERVER SENDS HTTPS MESSAGE TO USER CAUSING LINKS SO GENERATED TO BE DISPLAYED BY USER'S BROWSER, PREFERABLY ALONG WITH DESCRIPTIVE TEXT INDICATING WHAT DATA EACH LINK REPRESENTS

670

SERVER RECEIVES MESSAGE INDICATING WHICH DATA USER WANTS TO SEE, SENDS IT TO USER, INQUIRES WHETHER HE WANTS TO SEE MORE AND REPEATS PROCESS TILL ALL LEVELS OF TREE EXHAUSTED OR USER QUITS

FIG. 22B



SECURITY BARRIERS

FIG. 23

A PROCESS TO IMPLEMENT SECURITY BARRIERS TO PREVENT USERS FROM VIEWING DATA IN A USAGE MEASURING SERVER DATA STRUCTURE THAT THE USER NOT AUTHORIZED TO VIEW

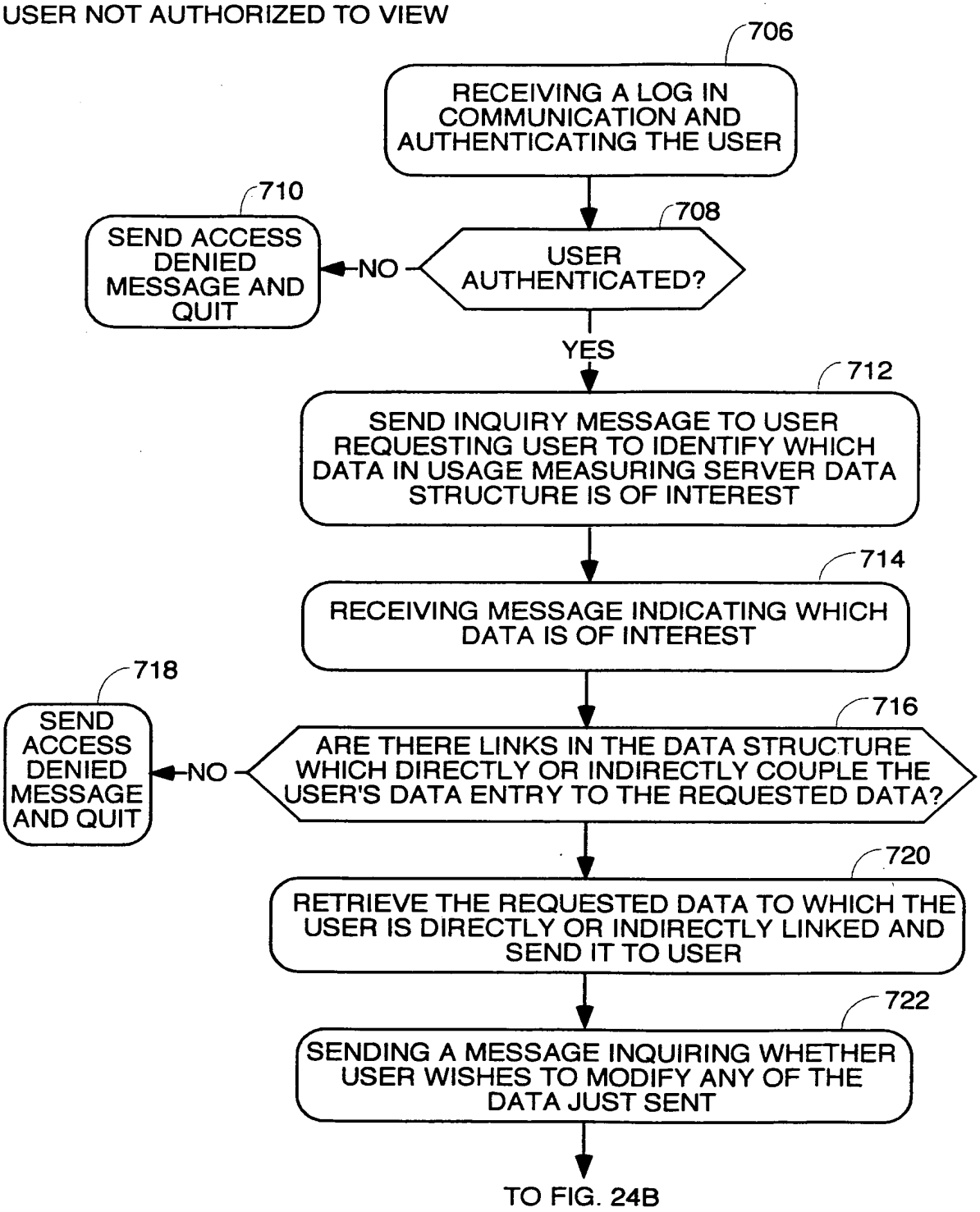


FIG. 24A

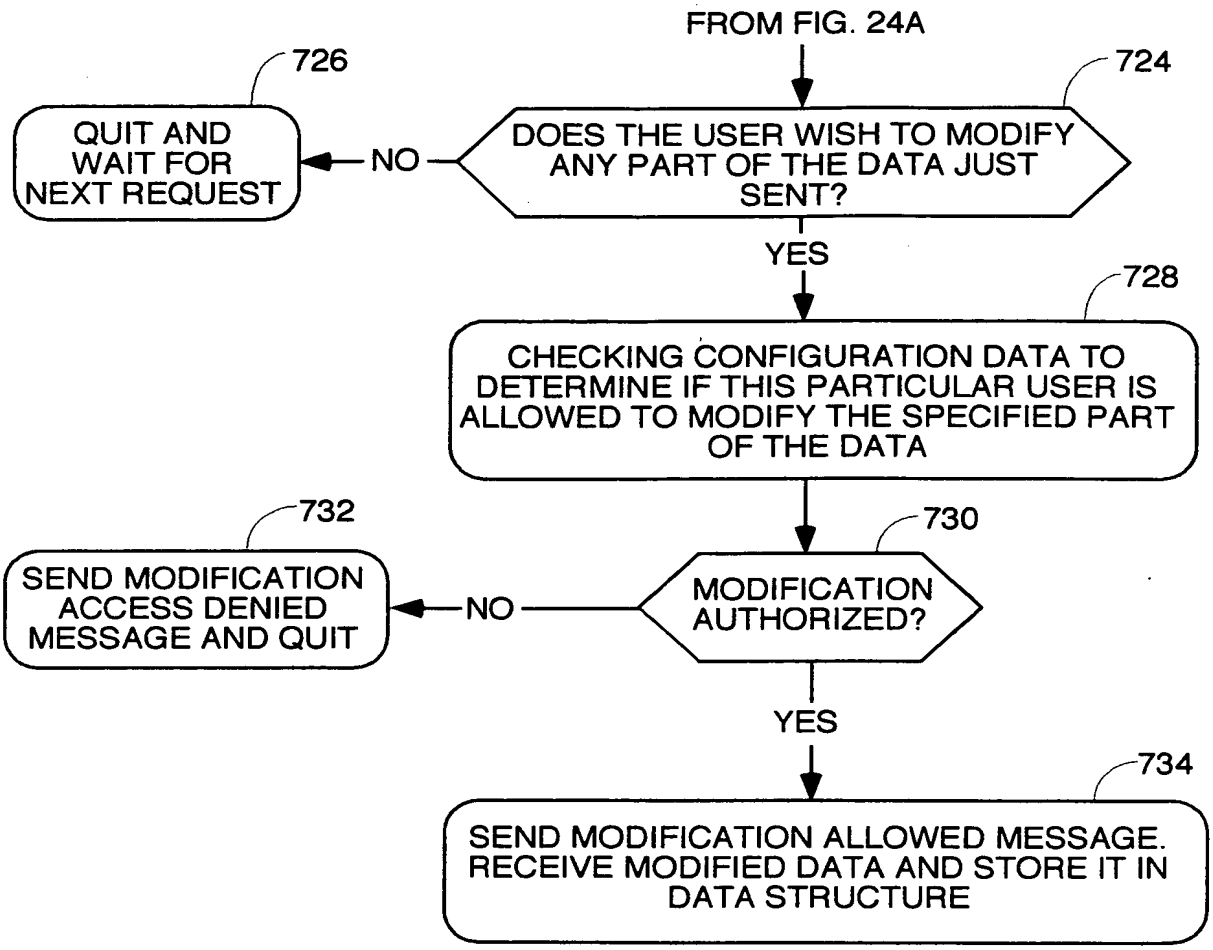

FROM FIG. 24A
724
DOES THE USER WISH TO MODIFY ANY PART OF THE DATA JUST SENT?
NO
726
QUIT AND WAIT FOR NEXT REQUEST
YES
728
CHECKING CONFIGURATION DATA TO DETERMINE IF THIS PARTICULAR USER IS ALLOWED TO MODIFY THE SPECIFIED PART OF THE DATA
730
MODIFICATION AUTHORIZED?
NO
732
SEND MODIFICATION ACCESS DENIED MESSAGE AND QUIT
YES
734
SEND MODIFICATION ALLOWED MESSAGE. RECEIVE MODIFIED DATA AND STORE IT IN DATA STRUCTURE

FIG. 24B

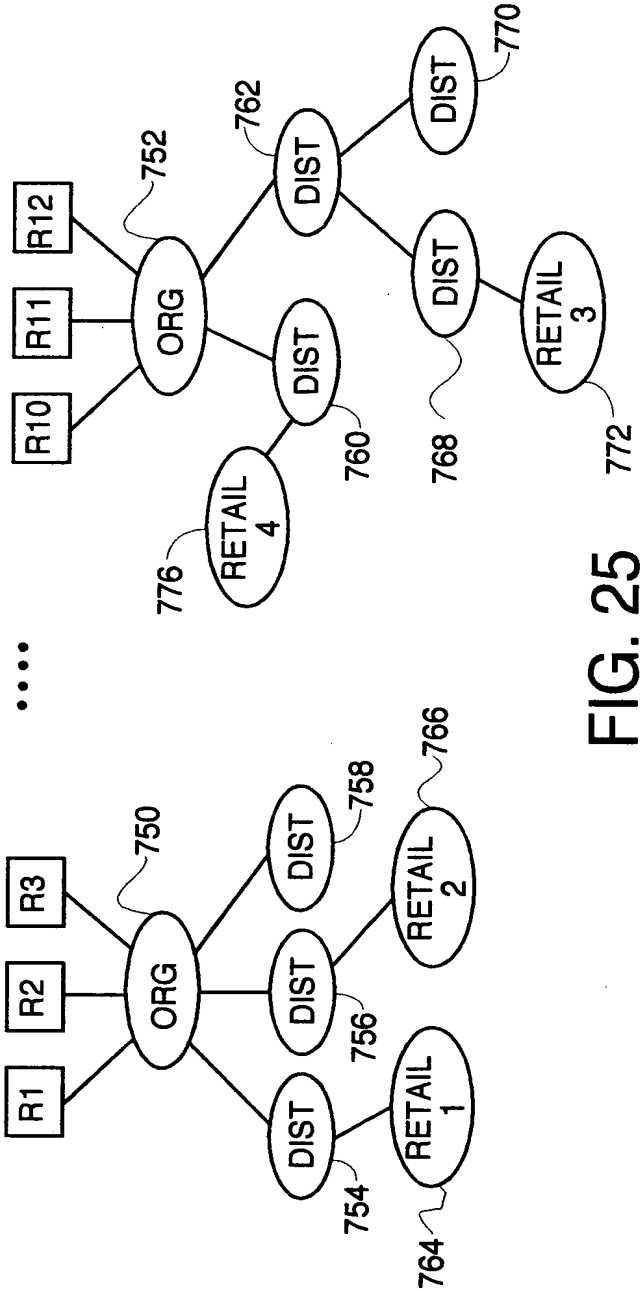

R1
R2
R3
R10
R11
R12
ORG
750
752
DIST
754
DIST
756
DIST
758
DIST
760
DIST
762
DIST
768
DIST
770
RETAIL 1
764
RETAIL 2
766
RETAIL 3
772
RETAIL 4
776

FIG. 25

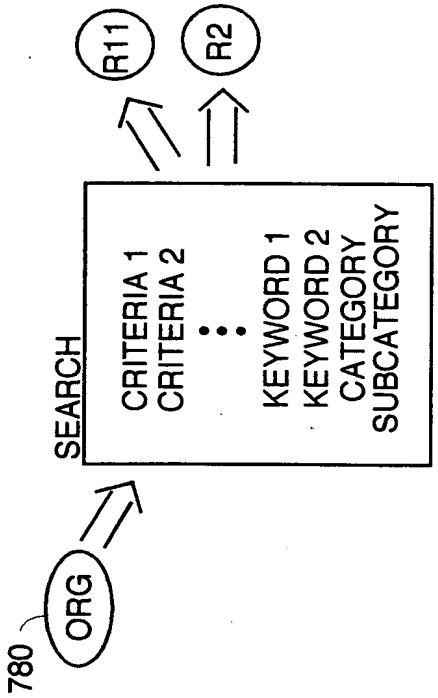

ORG
780
SEARCH
CRITERIA 1
CRITERIA 2
KEYWORD 1
KEYWORD 2
CATEGORY
SUBCATEGORY
R11
R2

FIG. 26

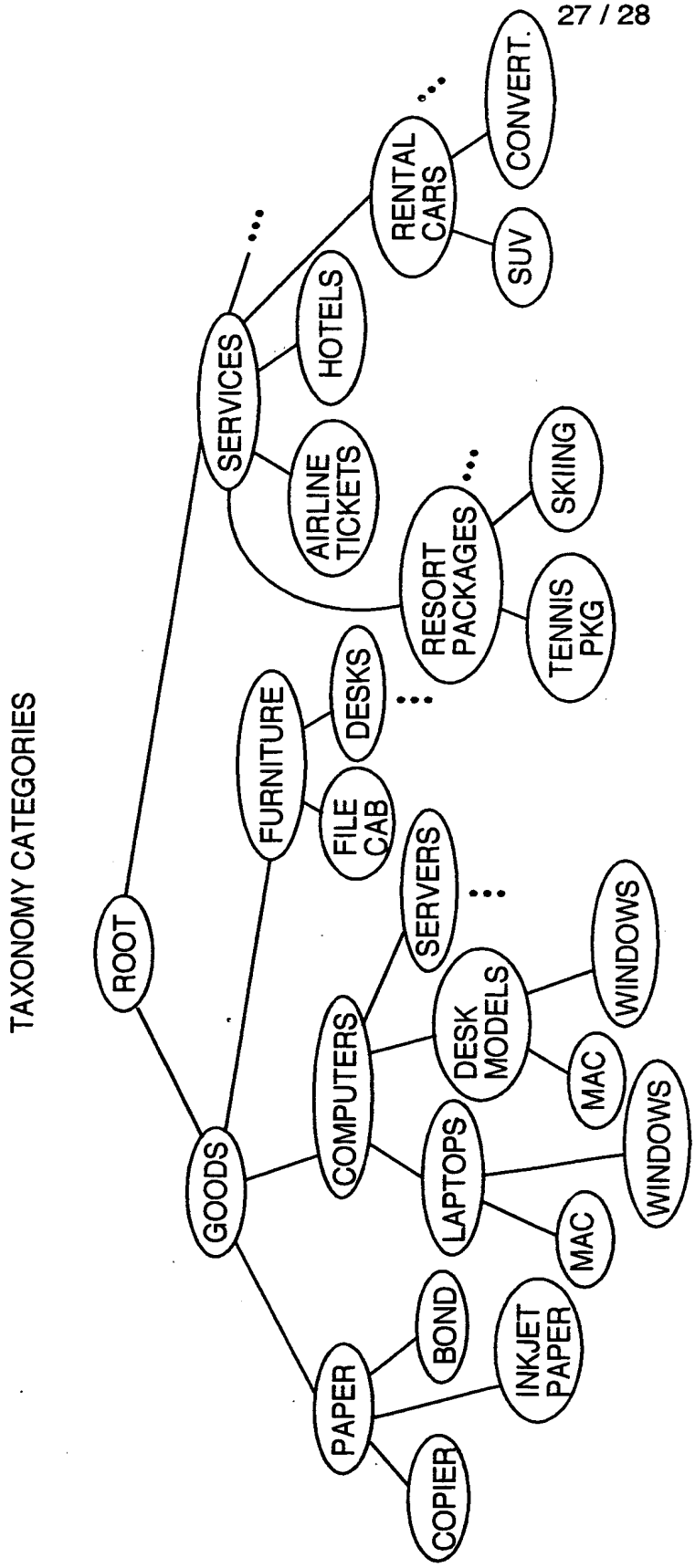


FIG. 27

6,959,281

SERVER PROCESSINGTO IMPLEMENT ONE-STOP SHOPPING SEARCHING OF THE DATA STRUCTURE BASED UPON USER-DEFINED CRITERIA

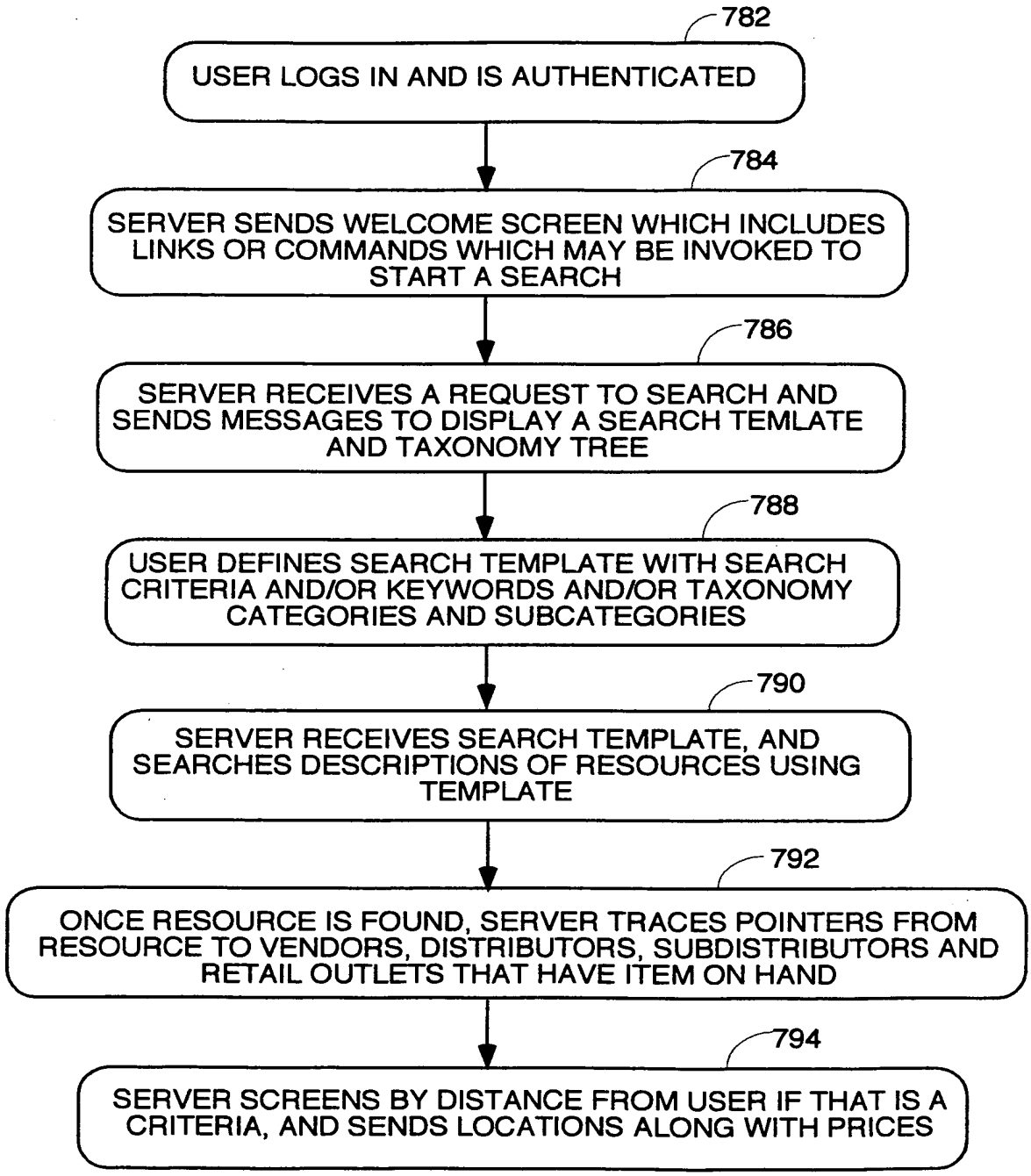


FIG.28